

Reply to Final Office Action of December 13, 2005
Amendment Dated: April 13, 2006

Appl. No.: 09/976,004
Attorney Docket No.: CSCO-010/4390

1 Claim 58 (Currently Amended): The device of claim 53-57, wherein said first
2 signaling message contains a plurality of parameters related to a range of virtual circuits
3 comprised in said plurality of virtual circuits, said device further comprising:

4 means for storing said plurality of parameters associated with said range of virtual
5 circuits; and

6 means of provisioning said range of virtual circuits using said plurality of parameters,
7 whereby said plurality of parameters are transmitted only once for provisioning said
8 range of virtual circuits.

1 Claim 59 (Currently Amended): A computer readable medium carrying one or more
2 sequences of instructions for causing a device to set up a plurality of virtual circuits between
3 a first end system and a second end system, said plurality of virtual circuits being set up on
4 a network connecting said first end system to said second end system, each of said plurality
5 of virtual circuits terminating at said first end system and said second end system, said
6 device being located in a communication path located between said first end system and said
7 second end system, wherein execution of said one or more sequences of instructions by one
8 or more processors contained in said device causes said one or more processors to perform
9 the action of:

10 sending to said second end system a first signaling message requesting said plurality
11 of virtual circuits to be set up;

12 receiving an acceptance message, said acceptance message indicating that a plurality
13 of switches in a connection path between said first end system and said second end system
14 have set up said plurality of virtual circuits, wherein said plurality of switches accept said
15 plurality of virtual circuits but immediately provision fewer than said plurality of virtual
16 circuits; and

17 sending a second signaling message to activate at least one of a plurality of not-yet-
18 provisioned virtual circuits comprised in said plurality of virtual circuits.

1 Claim 60 (Original): The computer readable medium of claim 59, wherein said first
2 signaling message comprises a plurality of information elements, wherein a first information

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3 element is designed to request set up of a single virtual circuit comprised in said plurality
4 of virtual circuits, and a second information element is designed to request set up of a second
5 plurality of virtual circuits comprised in said plurality of virtual circuits, further comprising:
6 receiving an acceptance message indicating that only said single virtual circuit is
7 possible to be provisioned if any of a plurality of switches in a connection path between said
8 first end system and said second end system is designed not to support said plurality of
9 virtual circuits.

1 Claim 61 (Original): The computer readable medium of claim 60, wherein said
2 second information element comprises a non-mandatory information element according to
3 a specification, wherein non-mandatory information elements can be ignored by said
4 plurality of switches according to said specification.

1 Claim 62 (Canceled)

1 Claim 63 (Canceled)

1 Claim 64 (Currently Amended): The computer readable medium of claim 59-63,
2 wherein said fewer than said plurality of virtual circuits corresponds to one virtual circuit
3 such that only one virtual circuit is provisioned in response to said first signaling message.

1 Claim 65 (Original): The computer readable medium of claim 64, wherein said
2 plurality of virtual circuits is treated as a group of virtual circuits, wherein said first end
3 system and said second end system support a plurality of groups including said group,
4 further comprising maintaining a bundle structure associated with each of said plurality of
5 groups, wherein said bundle structure stores information identifying the specific plurality
6 of virtual circuits forming the corresponding group.

1 Claim 66 (Original): The computer readable medium of claim 65, further comprising:

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2 maintaining a plurality of call reference structures, wherein each of said plurality of
3 call reference structures maintains the state of a call, wherein signaling messages related to
4 each group are received on a corresponding call; and
5 maintaining a plurality of per-VC structures, wherein each per-VC structure stores
6 information related to a plurality of call parameters accepted for a corresponding one of said
7 plurality of virtual circuits.

1 Claim 67 (Original): The computer readable medium of claim 66, wherein said
2 sending, said receiving and each of said maintaining are performed in a switch contained in
3 said connection path, further comprising:

4 maintaining a plurality of switch structures, wherein each of said plurality of switch
5 structures stores a mapping of an identifier of each of said virtual circuit in inbound
6 direction to another identifier of the virtual circuit in outbound direction;

7 mapping each identifier received in inbound direction to a corresponding identifier
8 in outbound direction using said plurality of switch structures.

1 Claim 68 (Original): The computer readable medium of claim 66, wherein said first
2 end system comprises an edge router and wherein said actions are performed in said first
3 edge router, wherein said first signaling message contains a bundle identifier which is
4 propagated without translation by each of said plurality of switches.

1 Claim 69 (Currently Amended): The computer readable medium of claim 59-62,
2 wherein said acceptance message and said first signaling message are both formed according
3 to a common format, wherein said common format contains a field which indicates whether
4 a message comprises said acceptance message or said first signaling message.

1 Claim 70 (Original): The computer readable medium of claim 69, wherein said
2 format allows a range of virtual circuits to be specified, said format further allowing a
3 plurality of traffic parameters to be specified for all of said range of virtual circuits, wherein

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4 said plurality of parameters in said first signaling message specify the desired parameters
5 and said plurality of parameters in said acceptance message specify the accepted parameters.

1 Claim 71 (Original): The computer readable medium of claim 70, further comprising
2 sending a release message requesting release of another range of virtual circuits.

1 Claim 72 (Currently Amended): A computer readable medium carrying one or more
2 sequences of instructions for causing a device to support the setting up of a plurality of
3 virtual circuits between a first end system and a second end system, said plurality of virtual
4 circuits being set up on a network connecting said first end system to said second end
5 system, each of said plurality of virtual circuits terminating at said first end system and said
6 second end system, wherein execution of said one or more sequences of instructions by one
7 or more processors contained in said device causes said one or more processors to perform
8 the action of:

9 receiving from said first end system a first signaling request requesting said plurality
10 of virtual circuits to be set up;
11 provisioning fewer than said plurality of virtual circuits to said second end system;
12 sending an acceptance message after said provisioning if said plurality of virtual
13 circuits can be set up between said device and said second end system in response to said
14 first signaling request alone.

1 Claims 73 - 75 (Canceled)

1 Claim 76 (Currently Amended): The computer readable medium of claim 72-75,
2 further comprising:
3 receiving a second signaling message requesting activation of at least one of said not-
4 yet-provisioned virtual circuits comprised in said plurality of virtual circuits;
5 completing provisioning of said at least one of said not-yet-provisioned virtual
6 circuits; and

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7 sending a completion message indicating said at least one of said not-yet-provisioned
8 virtual circuits have been activated.

1 Claim 77 (Original): The computer readable medium of claim 76, wherein said first
2 signaling message contains a plurality of parameters related to a range of virtual circuits
3 comprised in said plurality of virtual circuits, further comprising:
4 storing said plurality of parameters associated with said range of virtual circuits; and
5 provisioning said range of virtual circuits using said plurality of parameters,
6 whereby said plurality of parameters are transmitted only once for provisioning said
7 range of virtual circuits.

1 Claim 78 (Original): The method of claim 1, wherein each of said plurality of virtual
2 circuits comprises a asynchronous transfer mode (ATM) virtual circuit provided between
3 said first end system and said second end system.